OAIS in the Library Environment

Managing and Preserving Electronic Resources
FLICC/CENDI
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Anne Van Camp
RLG, Member Initiatives
avc@notes.rlg.org

Who, Why, and What?

- Who am I?
- Why am I here?
- What are we doing of interest?

RLG

- Non-profit corporation, founded in 1974
- 165 members in 15 countries

- Mission:
  - Through collaborative action with our members, increase access and preserve information that supports research and learning

RLG Collaboration

- Collaborative initiatives
  - Resource sharing, digital initiatives, primary sources management, preservation standards, museum documentation
- Networked Information Services
  - Online research resources
  - Record and document supply

Collaboration & Best Practice in Digital Preservation

- Preservation Metadata
- Digital Archive Attributes
- In the context of existing and/or emerging international standards
  - Open Archival Information System (OAIS)
    - **International, widely diverse communities**

What Do I Mean by Digital Preservation?

- Two distinct, but equally important functions
  - Long-term maintenance of a bytestream (digital objects);
  - Continuing access to its contents over time and through changing technology

What Does Digital Preservation Do?

- Preservation should allow future users to:
  - retrieve, access, decipher, view, interpret, understand, appreciate, and experience
  - informational entities (i.e., documents, data, records, audio, video, etc.)
  - in whatever ways and for whatever purposes are desired in the future
  - while retaining their meaning and validity (i.e., their “authenticity”)

-Jeff Rothenberg

Interested Communities

- National archives
- National libraries
- Research repositories
  - Public and private archives
  - University libraries
  - Public and private research repositories
  - Museums

What are We Doing Now?

- Digital repository [archive] models
  - Open Archival Information System (OAIS)
- Attributes of a digital repository for research resources
- Preservation metadata
- Digital preservation policies

Necessary Tools and Guidelines

- Definitional Documents
  - Attributes of a Trusted Digital Repository
- Architectural Models
  - OAIS Reference Model
- Administrative Functions & Policies
  - Policy Frameworks for Digital Archives
- Selection Policies
- Access Systems/Metadata Structures
  - Information Infrastructure for Digital Archives

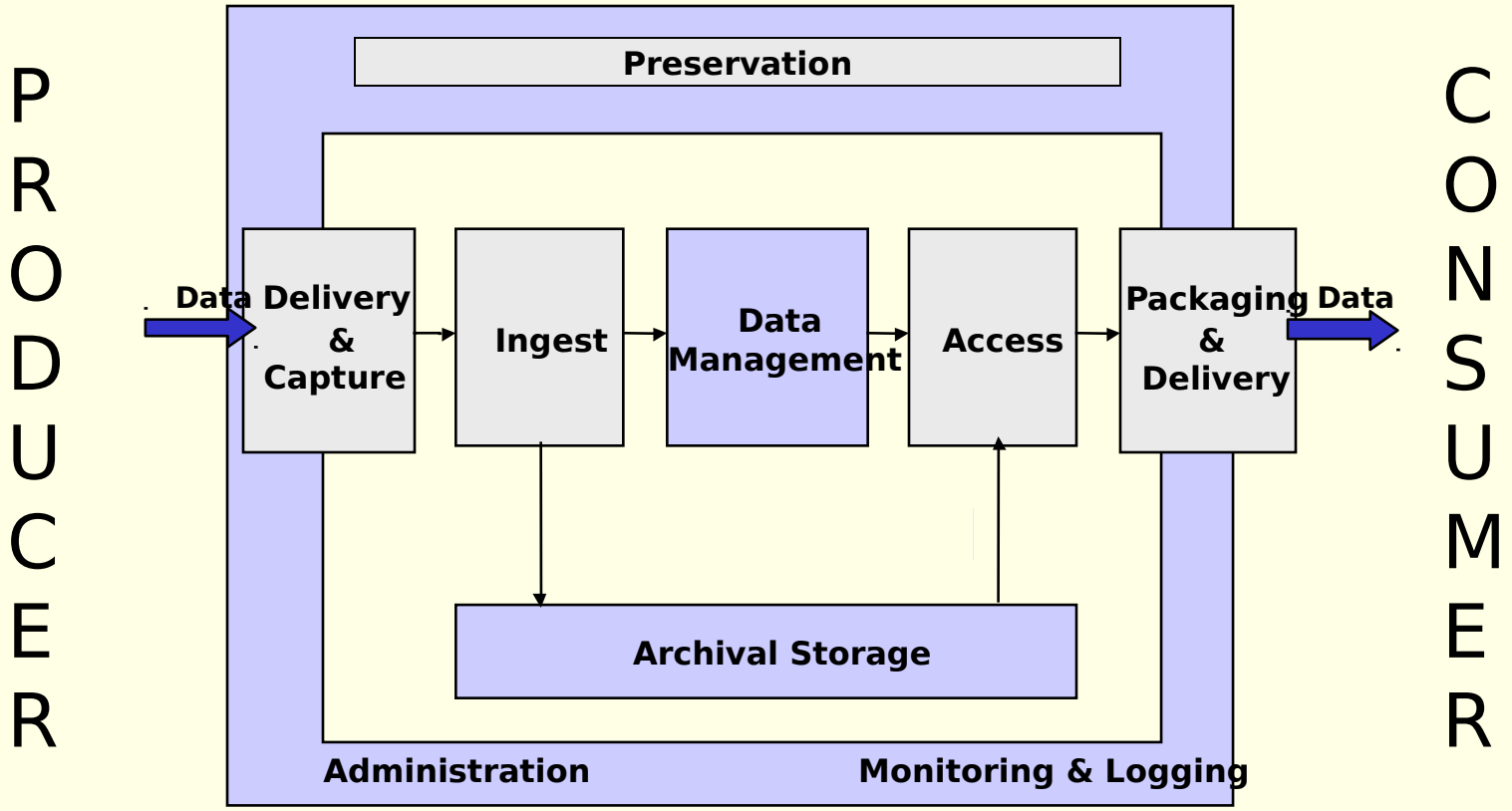
Open Archival Information System Reference Model

- Framework for understanding and applying concepts needed for long-term preservation of digital information
    - Development to fit certain information types (digital images, space systems data, etc.) left to those who adopt the model
- Facilitates description and comparison of archives
- Addresses a full range of archival functions
- Broad, international interest

Examples of OAIS Influence in Libraries

- NEDLIB (Networked European Deposit Library) Project
- CEDARS (CURL Exemplars in Digital Archiving) Project
- British Library
- Koninklijke Bibliotheek (National Library of the Netherlands)
- National Library of Australia
- Harvard University

Defining Attributes



RLG/OCLC Working Group on Digital Archive Attributes

Scope:

- Create a definitional document describing the characteristics of reliable, digital archives for heterogeneous research collections
- Identify tools to support institutions in seeking or building archiving services
- Present recommendations to RLG and OCLC suggesting solutions for developing tool sets
- Identify any follow-on activities required

Draft Report

Attributes of Trusted Digital Repositories: Meeting the Needs of Research Resources (August 2001)

www.rlg.org/longterm/attributes01.pdf

- High-level, conceptual “discussion”
- Provides a framework for the “deep infrastructure” identified in the 1996 report, Preserving Digital Information

What Does the Report Do?

- Provides a definition of a *trusted* digital repository
- Identifies the primary attributes of a *trusted* digital repository
- Articulates a framework for the development of a certification program
- Identifies the responsibilities of an OAIS-compliant repository

Attributes Framework

- Administrative responsibility
- Organizational viability
- Financial sustainability
- Technological suitability
- System security
- Procedural accountability

Administrative Responsibility

- Meet appropriate national and/or international standards for the physical environment
- Meet or exceed community standards for performance
- Collect and share data measurements routinely with depositors
- Involve external community experts in validating and/or certifying its processes and procedures on a regular schedule

Organizational Viability

- Mission statements reflect appropriate commitment
- Demonstrate viability and trustworthiness
  - legal status
  - transparent business practices
  - staff training
- Written agreements with depositors
- Contingency plans and “succession” plans

Financial Sustainability

- Good business practices and plan
- Regular audit schedule
- Short- and long-term financial planning cycles
- Adequate operating budgets and reserves
- Appropriate fiscal practices and conduct

Technological Suitability

- Consider all relevant options
- Communicate openly about the suitability of variant strategies
- Have appropriate hardware and software in place
- Policies and plans for replacing technology
- Comply with all relevant standards and best practices
- Ensured staff expertise

System Security

- Systems used will be designed to assure the security of the digital assets managed there
- Policies and practices will meet community requirements
  - particularly those pertaining to copying processes, authentication systems, firewalls, and backup systems.
- Disaster response
- Data protection

Procedural Accountability

- Documented practices, available upon request
- Have monitoring mechanisms in place
  - For systems
  - For procedures
- Preservation strategies (migration, emulation, etc.) undertaken are recorded and justified in context of community best practices
- Feedback mechanisms to support problem resolution

Other Important Issues

- The importance of trust
  - What is trust
  - Between what and whom
  - How is it validated?

- The need for certification

Certification

- Key component of a *trusted* digital repository
- Self-assessment will not always be adequate
  - especially if institutions choose to use third-party services
- In past, certification practices have been informal and implicit

However,

the attributes to be measured in certification are easier to define than the process and infrastructure of certification

So where do we go from here?

Framework for Certification Program

- Determine the need for an official certifying body
  - and who it may be, qualifications, etc.
- Identify the attributes to be measured
- Specify the frequency or cycle of certification
- Define the conditions for revocation of certification

Applicability & Practicality

- Number of institutions in the process of building and organizing digital repositories
- Other organizations will look for third-party archiving services
- Report articulates roles and responsibilities of long-term repositories
  - Provides a framework for measuring reliability and performance
  - Outlines a second framework for certification

Next steps

- Certification effort surging forward
- Tools for OAIS implementers
  - Discussion list for practitioners
  - Web site of organizations using OAIS
- Follow-on recommendations

Sources for Further Information

- Research Libraries Group and *RLG DigiNews*
  www.rlg.org/longterm/ www.rlg.org/preserv/diginews
- Cedars Project and Camileon Project
  www.leeds.ac.uk/cedars/
  www.si.umich.edu/CAMILEON/
- National Library of Australia
  www.nla.gov.au/preserve/
- Networked European Deposit Library (NEDLIB)
  www.kb.nl/coop/nedlib/
- Preserving Access to Digital Information (PADI) subject gateway
  www.nla.gov.au/padi/